The Rip Tide

The E-newsletter of the New Hampshire Coastal Program April 2007

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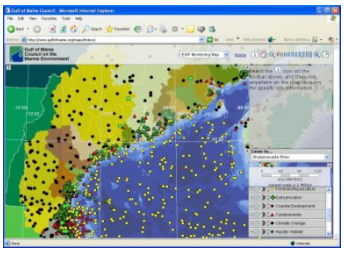

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NEWS

The Power of the Tides

NHCP and the Office of Energy and Planning Host Tidal Energy Workshop.

Underwater turbine, Verdant Power

Increasing interest in renewable energy sources has put tidal energy, or using the tides to generate electric power, as one of the alternatives to traditional energy sources, both nationally and in New Hampshire. The Coastal Program at DES has taken the first step in bringing together local, state and federal stakeholders in Maine and New Hampshire to share information and learn about this technology.

The Tidal Energy Workshop, hosted by the Coastal Program and the Office of Energy and Planning, was held in February in light of two preliminary permit applications before the Federal Energy Regulatory Commission for tidal energy projects in the Piscataqua River.

Approximately 75 attendees, who ran the gamut from New Hampshire state representatives to agency and local officials, heard an overview of tidal energy technology, HB 694, the new bill introduced this year in the New Hampshire House that would establish a study committee on tidal energy under bridges, and the uses and resources of the Piscataqua River. Because of space limitations, some potential attendees were unable to attend, but the workshop was also available through a live web cast, the first of its kind at DES.

"By providing information to stakeholders and letting people know who the federal and state contacts are, we are better serving the public," said Chris Williams of the Coastal Program.

Tidal energy is a renewable resource because it is produced by the tides, which are predictable and don't produce pollution. Harnessing the tides for energy has evolved from the 1960s dam-like structures that only provided energy during out-going tides, to today's modern underwater windmills, which capture both incoming and out-going tides. However, potential environmental impacts, as well as impacts to commercial fisheries, shipping and recreational uses, make it a complicated energy alternative that involves an intense regulatory process.

The tidal workshop also provided participants with insight into the Federal Energy Regulatory Commission's preliminary permit process for tidal energy projects and the state of New Hampshire's process of energy facility evaluation, siting, construction and operation. FERC is the lead agency on tidal energy projects located in state waters.

This year, Rep. Thomas Fargo, D-Dover, introduced HB 694 to the House, which would establish a study commission to examine the feasibility of tidal power generation under the Little Bay and General Sullivan Bridges on the Newington/Dover line. According to Fargo, advantages of tidal energy under bridges as opposed to open channels include less chance of fishing gear entanglement and fewer impediments to navigation.

HB 694 would investigate regulatory requirements necessary to determine the feasibility of building a tidal power generating system, including cost benefit analysis, public feeling, and environmental impacts.

To view speakers' presentations and a list of tidal workshop attendees, please visit www.des.nh.gov/coastal/ocean_policy.html

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Roads Scholars

Classes educate road workers on preventing harmful sediment from entering our water.

The room is filled with flannel shirts, workboots and hats. One gentleman is wearing a T-shirt that says, "Gotta Mow," on the back.

A schematic drawing goes up at the front of the room, showing a road, its shoulders and slope.

"What would you do in this area?" asks the instructor.

Hands go up and answers flood in faster than you can say 100-year stormwater event.

The knowledge and interest of the 32 participants fills the room. Many are from public works departments in the coastal watershed-- the area of land that drains into our ocean.

The class, Erosion and Sediment Control II, looks at how workers can reduce water quality problems associated with road maintenance and construction. The idea is to limit the amount of sediment, or soil, gravel and rock, from ending up in water. Sediment pollution can degrade water quality in lakes, rivers and streams where people boat, swim and fish, and even use for drinking water.

Kathy DesRoches, director of Education Programs at the University of New Hampshire Technology Transfer Center, or T2, coaches T2's class instructors to interact with the participants rather than lecture. T2 provides technical and management information about roads and bridges to public works directors, road agents, other municipal officials, and private and public road-related organizations.

"This group already cares about the environment; they hunt, fish and garden. Our instructors make a relevant connection to the audience," said DesRoches. For instance, a fish skeleton slide demonstrated how too much sediment can alter aquatic habitat and water quality, which can result in fish kills.

Dave Eckman, engineer and today's instructor, began class by talking about why folks should care about the negative impacts of sedimentation. Among other reasons, the slide listed pollution, property damage and increased construction costs. He shows the class how to stop erosion with best management practices, which are techniques that give the best results at the lowest cost.

Sedimentation caused by erosion is a concern in coastal waterways, according to Sally Soule, New Hampshire Coastal Program, who is charged with implementing the federal Coastal Nonpoint Source Pollution Plan, approved in 2001. The plan identified that better awareness of best management practices on construction sites was needed to prevent sediment pollution. The Coastal Program supported the T2 class through funding.

Students learn about erosion and sediment control.

"T2 helps lessen environmental impact," said Barbara McMillan of the DES Watershed Assistance Program. "One of the best things about T2 is that they command the respect and interest of the group they want to reach with information."

Jason DeWildt, onsite construction engineer in Rochester, came to Erosion and Sediment Control II as a refresher and to keep up to date on control practices.

"A lot I already know, but it also puts new ideas into my head," DeWildt said. He's been taking classes for five years and said that attendance has always been high.

On average, T2 runs 40 classes per year and this spring will offer 24, ranging from "Ethics for Public Works," to "A Hard Road to Travel," which will cover issues associated with Class VI Roads. Each workshop lasts five hours and results in credit towards the Roads Scholars Program, which has established educational and training requirements and recognizes those who successfully complete specified T2 Center Programs. Four levels with varying degrees of requirements are offered and can earn road

practitioners with the distinction of Roads Scholar I all the way up to Master Roads Scholar.

For more information about T2, please visit www.t2.unh.edu. For more information on class schedules and availability please visit www.t2.unh.edu/training/

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The Nomadic Salt Marsh

Winter's wrath moves salt marsh plants.

By Dave Kellam
New Hampshire Estuaries Project
Part of the Eye on the Estuaries Column Series

A salt marsh along the shores of Great Bay appears as tranquil as any artist's still-life, disrupted only by the occasional heron or salt marsh sparrow. But in reality, these areas are restless, dynamic habitats, as evidenced by the nomadic travels of several salt marsh plants.

Squamscott Salt Marsh, Stratham, New Hampshire

One such plant is smooth cord grass (*Spartina alterniflora*) that is the dominant species found in New England salt marshes. Through the winter and early spring, ice sheets move small patches of this plant from the high marsh area to the shallow waters of the estuary where they form isolated peat islands. The process, called ice rafting, that creates these islands involves freezing temperatures and the action of the tides. When an ice sheet rests on the bottom at low tide, exposed plants and mud freeze to it, like a kid's tongue to a frosty lamppost. Then as the tide comes in, the ice floats and brings sections of the marsh with it. When the ice breaks up in the spring, the entrained marsh plants are deposited in the tidal shoreline.

According to UNH Professor of Plant Biology Dr. Arthur Mathieson, the small islands "are ultimately doomed because the plants are suited for high marsh habitat, not the deeper, saltier waters of the shallow subtidal zone." To see examples of nomadic salt marsh islands, Mathieson suggests looking near the shores of Lubberland Creek on Bay Road in Newmarket, or close to Chapman's Landing in Stratham.

Smooth cord grass is not the only thing that the ice takes for a ride. Mathieson notes that ice rafting has resulted in drift populations of the common intertidal seaweed knobbed wrack *(Ascophyllum nodosum)* being transported to southerly locations near Bermuda, about 1,000 miles away.

Indirectly, ice is responsible for an even longer journey for knobbed wrack, which is not a plant but actually a fucoid brown alga. When ice clips the ends of the algae, it grows into long, free-floating stems that look radically different than its original form. Known as ecads, these altered forms are collected and used in part as packing material for the exportation of lobsters and sea worms. This commercial use has made knobbed wrack a true world traveler.

Mathieson, along with UNH colleagues Jeb Byers, Dave Burdick and Larry Ward, work with their students to study ecological implications of ice rafting for both salt marsh vegetation and attached fucoid brown algae. Mathieson notes that the ice damage to salt marshes is profound, but necessary. "Ice creates pools and edges that support a diverse collection of animals and plants. Ice is destructive in the short-term, but it is an important part of long-term salt marsh ecology in New England."

Eye on our Estuaries is an educational column initiated by the New Hampshire Estuaries Project (NHEP) about coastal

watershed issues. The NHEP is a collaborative program involving governmental agencies, universities, nonprofit organizations, businesses and the public to protect, enhance and monitor the environmental quality of the state's coastal bays and rivers. NHEP is funded in part by a grant from the U.S. Environmental Protection Agency. For details, visit www.nhep.unh.edu.

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ANNOUNCEMENTS

Coastal Management's Crystal Ball

The National Oceanic Atmospheric Administration and Coastal States Organization has been given an ambitious task: determine the future of coastal zone management. The results of their three-phased visioning effort could have a profound impact on the way the Coastal Zone Management Act is implemented and perceived.

The original 1972 legislation calls for the balance of preservation, protection, and restoration and enhancement of coastal areas with commercial and economic interests. If this sounds like a tall order, it is. The broadness of the language is intended to give each state the freedom to implement the Act to best serve its unique needs. For instance, the NHCP has allocated some of its funding to a competitive grant program while the Maine Coastal Program uses all of its funds to provide assistance through its staff members. Support for the Coastal Zone Management Act, which authorizes the 34 coastal zone management programs and 27 research reserves in the U.S., has dwindled in the U.S. Congress over the last few years.

The Coastal Zone Management act works through people and networks. Just like no NHCP restoration, planning or outreach project is quite the same, no coastal program's partnerships and methodology is identical either.

Currently, NOAA and the Coastal States Organization (CSO), an organization providing support to state coastal programs and research reserves, are organizing five stakeholder workshops around the country, with one in Waltham, Massachusetts scheduled for May 8. The workshop series is the third part of the information and feedback collection that will be used to guide future activities under the Coastal Zone Management Act. The first phase involved group brainstorming discussions at the annual CZM conferences around the country, which included local, state and federal stakeholders, and the second phase was individual interviews conducted by CSO staff of these stakeholders.

The upcoming workshops will be by invitation-only, ensuring that they don't exceed the capacity of 100 attendees per workshop. CSO and NOAA asked each state's coastal program to provide a list of suggested invitees that should participate. In addition, there are 26 stakeholder categories to encourage a range of non-usual stakeholders from multiple states, including farming, coastal hazards and recreation. If you are interested in participating in the workshop, please contact NHCP Manager Ted Diers at (603) 559-0027. For more information, please visit www.coastalmanagement.noaa.gov/czm/czma_vision.html

To aid in the visioning effort, NOAA and CSO are looking for people with broad vision and good ideas, including some with fresh perspectives and some with a long-term understanding of the issues. While the focus of these meetings is on the broader stakeholders, some coastal zone management staff will attend. Those not selected will be offered the opportunity to provide input through other mechanisms. For instance, CSO is setting up conference calls around specific issue areas. Please contact Diers for more information.

Next steps will include preliminary recommendations on the visioning efforts by a subset of coastal program managers from around the nation, led by Diers.

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Free Technical Assistance Available

Does your planning board or conservation commission have a project that requires some technical assistance? The New Hampshire Estuaries Project (NHEP) will provide match free grant funding to pay consultants to work on qualifying natural resource projects, such as land conservation, buffer protection and stormwater management.

The program is intended to be simple for communities to participate: the NHEP pays for the assistance and manages the contract agreement with the consultants.

Applications will be accepted from communities from January 1, 2007 to June 8, 2007 (or as funds remain) and evaluated as they are received. Interested communities should confirm that funds remain before submitting an application to the NHEP. For more information please contact Jodi Castallo, project coordinator, at (603) 862-2641 or Jodi.Castallo@unh.edu. To download an application, please visit http://nhep.unh.edu/programs/community-assistance.htm#tap

2007 Gulf of Maine Council on the Marine Environment Action Plan Grants RFP

The Gulf of Maine Council on the Marine Environment seeks applications from non-government organizations to achieve specific outcomes in its new five-year Action Plan 2007-2012. View grant opportunities at http://gulfofmaine.org/council/opportunities/.

This year's grantees are asked to focus implementation of the council's 18-month work plan. The council invites eligible organizations to apply for funding made available e through a U.S. Congressional appropriation administered by National Oceanic and Atmospheric Administration (NOAA) to work toward these goals.

A completed application must be submitted via the electronic form at www.gulfofmaine.org/actionplan/grant/apply no later than May 15, 2007.

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A Few Good Best Management Practices

The University of New Hampshire Stormwater Center (UNHSC) and New England Nonpoint Education for Municipal Officials (NEMO) are currently developing a database that identifies local examples of best management practices (BMPs) to protect water resources.

This database is a cataloguing effort to aid developers and communities interested in knowing about local examples of innovative stormwater management throughout the New England region. You might be surprised how many of these innovative BMPs are out there: bioretention areas, rain gardens, gravel wetlands, and pervious pavements, to name some. A lack of familiarity and examples of implementation are often limiting factors to more widespread

acceptance of these BMPs. The database will provide basic information on type of system, location, designer, owner and contact information, but will not include performance data.

Please help! Do you know of any examples of BMP implementation that should be included in the database? Please take a moment and visit the on-line submission form where you can enter relevant information directly into the database: www.erg.unh.edu/lid/LID1.asp Please forward this request to any individual or organization that may also be able to provide examples.

The UNHSC is a research center dedicated to the protection of water resources through effective stormwater management. The UNHSC is involved in the testing and demonstration of stormwater management systems.

NEMO is a University of Connecticut program for local land use officials addressing the relationship of land use to natural resource protection. NEMO was created to provide information, education and assistance to local land use boards and commissions on how they can accommodate growth while protecting their natural resources and community character. The Natural Resources Outreach Coalition, a partnership of organizations providing planning assistance to New Hampshire Seacoast communities, is part of the NEMO network.

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Internships Available

DES Internships Available

Want to learn while doing this summer? The Coastal Program is looking for interns to help coordinate the Salt Marsh Monitoring and Coastal Volunteer Biological Assessment Programs. Application deadline is April 20, 2007. Coastal Program and other DES intern postings and how to apply are available at www.des.nh.gov/employment/summer_ops2007.pdf.

Research Reserve Internship Opportunity

The Great Bay National Estuarine Research Reserve (GBNERR) seeks applications for summer 2007 internships. The GBNERR is a part of a national network of state-owned and managed coastal protected areas that are designated and supported by the National Oceanic and Atmospheric Administration. For more information about the program, please visit www.greatbay.org Application deadline is April 18, 2007. Please contact Research Coordinator Kathy Mills at kmills@nhfgd.org for more information on position responsibilities.

Beach Cleanup Volunteers Needed

Adopt-A-Beach

The Blue Ocean Society for Marine Conservation is looking for businesses, clubs, schools and other groups to participate in the Adopt-A-Beach Program. Groups clean up and record data from their adopted site each month or can also choose to alternate with another group working on the same beach.

Regular monitoring helps follow pollution trends on individual beaches in New Hampshire. For more information, visit www.blueoceansociety.org/beachadopt.htm.

Student Cleanup
BOS will be holding a special clean-up day just for students in grades K-8 on September 14, 2007. Cleanups will be held at several coastal New Hampshire sites. Contact BOS now if you are interested in participating, and it will send you details over the spring and summer. Schools that sign up will receive a free, interactive in-school program on marine conservation!

Student Art Contest
The Blue Ocean Society invites students and educators who want to help the coast to participate in a student art contest. Winning posters will be used to advertise the ICC 2007.

If interested in learning more or participating in September's Student Cleanup Day, please contact Jen Kennedy at call (603) 431-0260 or e-mail jen@blueoceansociety.org

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New Hampshire Celebrates Release of Gulf of Maine Council 2007-2012 Action Plan

The Gulf of Maine Council on the Marine Environment, a U.S.-Canadian partnership of government and non-government organizations, including the state of New Hampshire, recently announced the release of the 2007-2012 Action Plan for protection of the Gulf of Maine ecosystem. The council works to maintain and enhance environmental quality in the Gulf of Maine to allow for sustainable resource use by existing and future generations. The council organizes conferences and workshops, offers grants, conducts environmental monitoring and raises public awareness on the environmental health of the Gulf of Maine.

Photo: Peter Taylor

The Action Plan describes the goals, outcomes, and activities that the council will pursue through its committees and partnerships in the next five years and was developed by incorporating public input and the findings of numerous studies, workshops, and key policy developments, including Canada's Oceans Action Plan, and the U.S. Ocean Action Plan.

"New Hampshire's breathtaking coastline is part of our heritage and part of the legacy we are entrusted with safeguarding for the future. The waters of the Gulf of Maine are used for recreational and commercial purposes, which are important to our way of life and our economy. That's why I am pleased to join neighboring states and provinces in protecting this valuable resource," said Governor John Lynch. DES Commissioner and Gulf of Maine Councilor Tom Burack said, "We look to the Gulf of Maine Council for leadership on marine environment issues that require regional solutions. We will continue to work with our neighboring states and provinces toward a sustainable marine environment that supports a vibrant economy." Detailed information about the council's activities, the Action Plan and the multi-year work plan are available at www.gulfofmaine.org.

The 2007–2012 Plan contains three overarching, long- range goals:

- **Goal 1--Coastal and marine habitats are in a healthy, productive, and resilient condition.**
- **Goal 2--Environmental conditions in the Gulf of Maine support ecosystem and human health.**
- **Goal 3--Gulf of Maine coastal communities are vibrant and have marine-dependent industries that are healthy and globally competitive.**

Calendar of Events Available on Website

Current events are regularly posted on online at www.des.nh.gov/asp/DESCalendar/. Check the calendar of events frequently to find new postings. The following are upcoming events of particular interest to coastal folks:

- **Earth Day Cleanup, April 21**
- **World Oceans Day, June 8**
- **Watershed Ecology Institute, July 23-27, 2007 and July 30-August 3, 2007 (10 days)**

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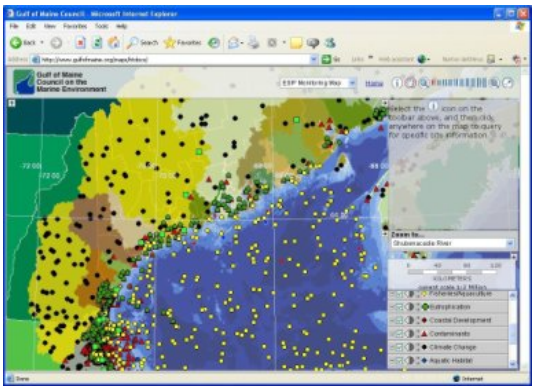
NEW PUBLICATIONS & PLANNING TOOLS

Gulf-wide data available online



There are at least 100 sources of environmental indicator data in the Gulf of Maine Watershed, ranging from weather stations collecting temperature data to organizations studying salinity levels and fish populations at restoration sites. An indicator is a measurement that shows what environmental conditions are like now and how they are changing over time.

An online map is available that displays monitoring sites related to the following indicators: contaminants and pathogens, eutrophication, aquatic habitat, fisheries and aquaculture, climate change and coastal development. Users can view the location of monitoring sites for each category and customize their view by adding or removing layers of data. So far, there are about 9,000 sites with more to be added.

Some information on each monitoring site is just a click away, such as the name of the monitoring organization, the type of data being collected and a latitude and longitude reading. Currently, the actual data measurements are not listed.

The map was developed by the Ecosystem Indicator Partnership, or ESIP, a Gulf of Maine Council committee.

For more information about ESIP and a link to the monitoring map visit www.gulfofmaine.org/esip/.

Other ESIP products include two reports: the Gulf of Maine Indicators Listening Sessions and Evaluation of Tides of Change Report at www.gulfofmaine.org/esip/docs/esiplistening.pdf, and the Strategy for Gulf of Maine Ecosystem Indicators and State of the Environment Reporting at www.gulfofmaine.org/esip/docs/esipstrategy.pdf.

The next ESIP meeting is scheduled for June 11, 2007, in connection with the Climate Change Network Launch. ESIP members will learn more about how climate change will impact their indicator areas and what implications this may have for monitoring. Researchers, decision makers and stakeholders interested in both the Gulf of Maine and climate change are encouraged to attend. For more information please visit www.gulfofmaine.org/, or if you would like to become a member of ESIP, please contact Christine Tilburg, ESIP program manager, at ctilburg@securespeed.us or (207) 929-8079.

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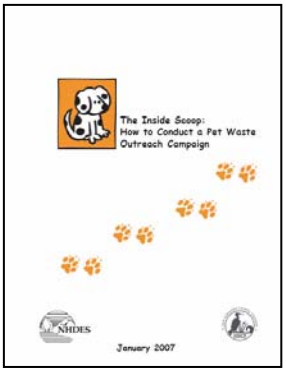
The Inside Scoop Manual Now Available Online

With more community members interested in doing pet waste reduction outreach projects, DES's NHCP and Watershed Assistance Program recently released the how-to manual, "The Inside Scoop: How to Conduct a Pet Waste Outreach Campaign." This publication provides a step by step guide to developing a successful program, as well as suggested outreach activities, resources and examples.

Just like human sewage, untreated pet fecal matter is harmful to waterways. Elevated bacteria levels linked to dog waste were found by University of New Hampshire and DES researchers at several sites in the Great Bay Coastal Watershed. A pilot pet waste reduction project in the Garrison Road neighborhood in Dover was so successful that it went citywide in 2005 and generated interest among neighboring towns, especially those where science backed up the need for management.



To download the manual, please visit
www.des.nh.gov/coastal/scoopthepoop.htm#man

In addition, the resources section is broken out on the website to make it easier to download specific parts. Some resources may even be applicable to other outreach projects.

Download resources at www.des.nh.gov/coastal/scoopthepoop.htm#man.

Fostering Sustainable Behavior, McKenzie-Mohr Associates

This website provides information on social marketing, or using psychological principles to change behavior, and includes case studies, articles and downloadable reports.

Most environment-related outreach programs are working towards a goal that requires people to change their behavior, such as picking up and disposing pet waste properly. According to Dr. Doug McKenzie-Mohr, environmental psychologist, numerous studies document that education alone often has little or no effect upon sustainable behavior. Please visit www.cbsm.com for more details.

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About this e-newsletter

The Rip Tide is NHCP's quarterly e-newsletter.

All subscribers' e-mail addresses on this list are kept confidential and are not shared by NHCP.

Contact Cathy Coletti, editor, at (603) 559-0024 or ccoletti@des.state.nh.us with questions or comments.

About NHCP

NHCP is a federally approved coastal program authorized under the Coastal Zone Management Act and is administered by the New Hampshire Department of Environmental Services. NHCP strives to maintain a balance between the use and preservation of coastal resources. Through partnerships, funding and science, NHCP works to improve water quality and decision making in 42 coastal watershed communities; supports maritime uses; and restores coastal wetlands.